

	Type	L #	Hits	Search Text	DBs
1	BRS	L1	10	("20010046453" "20020056816 " "20020104762" "2002014248 0" "20020146745" "200300271 50" "20030036204" "20030119 207" "5160702" "6306590") .P N.	US- PGPUB; USPAT
2	BRS	L2	14818	microfluid\$9	US- PGPUB; USPAT
3	BRS	L3	54	2 and separat\$9 same u near8 shape\$9	US- PGPUB; USPAT
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induced by the 90° turns within the channel. Finally, it is shown that the application of the proposed localized zeta potential variation method also results in a correction of the band tilting phenomenon and a reduction in the racetrack effect.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 3 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2005:8660012 INSPEC
TITLE: A novel dispersion control in CE chips by ζ-potential variation using field-effect
AUTHOR: Che-Hsin Lin; (Dept. of Mech. & Electro-Mech. Eng., National Sun Yat-sen Univ., Taiwan), Chia-Yen Lee; Lung-Ming Fu
SOURCE: TRANSDUCERS '05. The 13th International Conference on Solid-State Sensors, Actuators and Microsystems. Digest of Technical Papers (IEEE Cat. No. 05TH8791), Vol. 2, 2005, p. 1632-5 Vol. 2 of 2 vol. (xxxix+2162) pp., 7 refs.
ISBN: 0 7803 8994 8
Price: 0 7803 8994 8/2005/\$20.00
Published by: IEEE, Piscataway, NJ, USA
Conference: TRANSDUCERS '05. The 13th International Conference on Solid-State Sensors, Actuators and Microsystems. Digest of Technical Papers, Seoul, South Korea, 5-9 June 2005
Sponsor(s): Korean Sensors Soc
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English
AN 2005:8660012 INSPEC
AB The paper proposes a new technique, which varies the zeta potential along the channel walls in the vicinity of the microchannel corners in such as a way as to minimize the effects of turn-induced dispersion within U-shaped separation channels. The results for the folded square U-shaped separation channel indicate that boundary control of the zeta potential by field-effect significantly reduces the band dispersion induced by the 90° turns. Finally, the results confirm that application of the proposed localized zeta potential variation method results in a correction of the band tilting phenomenon and a reduction in the racetrack effect

L2 ANSWER 3 OF 3 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2004:8209804 INSPEC
DOCUMENT NUMBER: A2005-02-8245-020; B2005-01-2575-014
TITLE: Dispersion control in microfluidic chips by zeta potential variation using the field effect
AUTHOR: Gwo-Bin Lee; (Dept. of Eng. Sci., Nat. Cheng Kung Univ., Tainan, Taiwan), Lung-Ming Fu; Che-Hsin Lin; Chia-Yen Lee; Ruey-Jen Yang
SOURCE: Electrophoresis (June 2004), vol.25, no.12, p. 1879-87, 33 refs.
CODEN: ELCTDN, ISSN: 0173-0835
SICI: 0173-0835(200406)25:12L.1879:DCMC;1-D
Published by: Wiley-VCH, Germany
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: Germany
LANGUAGE: English
AN 2004:8209804 INSPEC DN A2005-02-8245-020; B2005-01-2575-014
AB A new technique to minimize the effects of turn-induced dispersion within U-shaped separation channels by using the field effect within a capacitor to vary the zeta potential along the channel walls in the vicinity of the

microchannel is described. The effects of the separation channel geometry, the fluid velocity profile, and the use of the field effect to control the zeta potential on the band distribution in the detection area are extensively discussed. The results for a U-shaped separation channel indicate that varying the zeta potential by controlling the field effect significantly reduces the band dispersion induced by the 90° turns within the channel. Finally, it is shown that the application of the proposed localized zeta potential variation method also results in a correction of the band tilting phenomenon and a reduction in the race-track effect

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=> s microfluid?

L3 20342 MICROFLUID?

=> s l3 and u (8w) shape? (8w) (?channel or conduit or chamber or path?)

L4 6 L3 AND U (8W) SHAPE? (8W) (?CHANNEL OR CONDUIT OR CHAMBER OR PATH?)

=> display l4 1-6 ibib abs

L4 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:571176 CAPLUS

DOCUMENT NUMBER: 141:231237

TITLE: Dispersion control in microfluidic chips by localized zeta potential variation using the field effect

AUTHOR(S): Lee, Gwo-Bin; Fu, Lung-Ming; Lin, Che-Hsin; Lee, Chia-Yen; Yang, Ruey-jen

CORPORATE SOURCE: Department of Engineering Science, National Cheng Kung University, Tainan, Taiwan

SOURCE: Electrophoresis (2004), 25(12), 1879-1887

CODEN: ELCTDN; ISSN: 0173-0835

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new technique to minimize the effects of turn-induced dispersion within U-shaped separation channels by using the field effect within a capacitor to vary the zeta potential along the channel walls in the vicinity of the microchannel is described. The effects of the separation channel geometry, the fluid velocity profile, and the use of the field effect to control the zeta potential on the band distribution in the detection area are extensively discussed. The results for a U-shaped separation channel indicate that varying the zeta potential by controlling the field effect significantly reduces the band dispersion induced by the 90° turns within the channel. Finally, it is shown that the application of the proposed localized zeta potential variation method also results in a correction of the band tilting phenomenon and a reduction in the racetrack effect.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 6 COMPENDEX COPYRIGHT 2007 EEI on STN

ACCESSION NUMBER: 2005(10):11339 COMPENDEX

TITLE: Experimental and numerical analysis of the geometry effects of low-dispersion turns in microfluidic systems.

AUTHOR: Tsai, Chien-Hsiung (Department of Vehicle Engineering Natl. Pingtung Univ. Sci./Technol., Pingtung 912, Taiwan); Tai, Chang-Hsien; Fu, Lung-Ming; Wu, Fu-Bin

SOURCE: Journal of Micromechanics and Microengineering v 15 n 2 February 2005 2005.p 377-385

SOURCE: Journal of Micromechanics and Microengineering v 15 n 2 February 2005 2005.p 377-385

CODEN: JMMIEZ ISSN: 0960-1317

PUBLICATION YEAR: 2005

DOCUMENT TYPE: Journal

TREATMENT CODE: Theoretical; Experimental

LANGUAGE: English

AN 2005(10):11339 COMPENDEX

AB This paper presents numerical and experimental investigations into the influence of the geometric bend ratio on turn-induced dispersion within U-shaped separation channels. The separation efficiency of an electrophoresis microfluidic device is known to be significantly influenced by the geometry and flow field conditions of the separation microchannel. Consequently, developing a thorough understanding of the effects of different geometries on the flow field physics in the separation microchannel is of fundamental concern in improving the design and operation of microfluidic chip systems. The turns in a microfabricated separation channel tend to induce a band-broadening effect, which degrades the separation efficiency of the device. Consequently, the present study designs and tests various geometric bend ratios with the aim of reducing this so-called 'racetrack' effect. The effects on the band distribution in the detection area of the separation channel geometry, the fluid velocity profile and the bend ratio are investigated theoretically and experimentally for the case of a 100 bp DNA sizing ladder sample. A good agreement is obtained between the numerical and experimental results. It is shown that the serpentine U-shaped

channel configuration is ideally suited to the efficient separation of this sample within miniature microfluidic devices. The results indicate that a bend ratio of 4 corrects band tilting and reduces the racetrack effect in the detection area, hence enabling an optimal separation performance. 36 Refs.

L4 ANSWER 3 OF 6 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2005:8660012 INSPEC
TITLE: A novel dispersion control in CE chips by ζ -potential variation using field-effect
AUTHOR: Che-Hsin Lin; (Dept. of Mech. & Electro-Mech. Eng., National Sun Yat-sen Univ., Taiwan), Chia-Yen Lee; Lung-Ming Fu
SOURCE: TRANSDUCERS '05. The 13th International Conference on Solid-State Sensors, Actuators and Microsystems. Digest of Technical Papers (IEEE Cat. No. 05TH8791), Vol. 2, 2005, p. 1632-5 Vol. 2 of 2 vol. (xxxix+2162) pp., 7 refs.
ISBN: 0 7803 8994 8
Price: 0 7803 8994 8/2005/\$20.00
Published by: IEEE, Piscataway, NJ, USA
Conference: TRANSDUCERS '05. The 13th International Conference on Solid-State Sensors, Actuators and Microsystems. Digest of Technical Papers, Seoul, South Korea, 5-9 June 2005
Sponsor(s): Korean Sensors Soc
DOCUMENT TYPE: Conference; Conference Article
TREATMENT CODE: Practical; Experimental
COUNTRY: United States
LANGUAGE: English
AN 2005:8660012 INSPEC
AB The paper proposes a new technique, which varies the zeta potential along the channel walls in the vicinity of the microchannel corners in such as a way as to minimize the effects of turn-induced dispersion within U-shaped separation channels. The results for the folded square U -shaped separation channel indicate that boundary control of the zeta potential by field-effect significantly reduces the band dispersion induced by the 90° turns. Finally, the results confirm that application of the proposed localized zeta potential variation method results in a correction of the band tilting phenomenon and a reduction in the racetrack effect

L4 ANSWER 4 OF 6 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2005:8409493 INSPEC
DOCUMENT NUMBER: A2005-13-8245-005; B2005-06-2575-022
TITLE: Experimental and numerical analysis of the geometry effects of low-dispersion turns in microfluidic systems
AUTHOR: Chien-Hsiung Tsai; Chang-Hsien Tai; (Dept. of Vehicle Eng., Nat. Pingtung Univ. of Sci. & Technol., Taiwan), Lung-Ming Fu; Fu-Bin Wu
SOURCE: Journal of Micromechanics and Microengineering (Feb. 2005), vol.15, no.2, p. 377-85, 36 refs.
CODEN: JMMIEZ, ISSN: 0960-1317
SICI: 0960-1317(200502)15:2L.377:ENAG;1-I
Price: 0960-1317/05/020377+09\$30.00
Doc.No.: S0960-1317(05)82013-3
Published by: IOP Publishing, UK
DOCUMENT TYPE: Journal
TREATMENT CODE: Theoretical; Experimental
COUNTRY: United Kingdom
LANGUAGE: English
AN 2005:8409493 INSPEC DN A2005-13-8245-005; B2005-06-2575-022
AB This paper presents numerical and experimental investigations into the

influence of the geometric bend ratio on turn-induced dispersion within U-shaped separation channels. The separation efficiency of an electrophoresis microfluidic device is known to be significantly influenced by the geometry and flow field conditions of the separation microchannel. Consequently, developing a thorough understanding of the effects of different geometries on the flow field physics in the separation microchannel is of fundamental concern in improving the design and operation of microfluidic chip systems. The turns in a microfabricated separation channel tend to induce a band-broadening effect which degrades the separation efficiency of the device. Consequently, the present study designs and tests various geometric bend ratios with the aim of reducing this so-called 'racetrack' effect. The effects on the band distribution in the detection area of the separation channel geometry, the fluid velocity profile and the bend ratio are investigated theoretically and experimentally for the case of a 100 bp DNA sizing ladder sample. A good agreement is obtained between the numerical and experimental results. It is shown that the serpentine U-shaped channel configuration is ideally suited to the efficient separation of this sample within miniature microfluidic devices. The results indicate that a bend ratio of 4 corrects band tilting and reduces the racetrack effect in the detection area, hence enabling an optimal separation performance

L4 ANSWER 5 OF 6 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2004:8209804 INSPEC
DOCUMENT NUMBER: A2005-02-8245-020; B2005-01-2575-014
TITLE: Dispersion control in microfluidic chips by zeta potential variation using the field effect
AUTHOR: Gwo-Bin Lee; (Dept. of Eng. Sci., Nat. Cheng Kung Univ., Tainan, Taiwan), Lung-Ming Fu; Che-Hsin Lin; Chia-Yen Lee; Ruey-Jen Yang
SOURCE: Electrophoresis (June 2004), vol.25, no.12, p. 1879-87, 33 refs.
CODEN: ELCTDN, ISSN: 0173-0835
SICI: 0173-0835(200406)25:12L.1879:DCMC;1-D
Published by: Wiley-VCH, Germany
DOCUMENT TYPE: Journal
TREATMENT CODE: Practical; Experimental
COUNTRY: Germany
LANGUAGE: English
AN 2004:8209804 INSPEC DN A2005-02-8245-020; B2005-01-2575-014
AB A new technique to minimize the effects of turn-induced dispersion within U-shaped separation channels by using the field effect within a capacitor to vary the zeta potential along the channel walls in the vicinity of the microchannel is described. The effects of the separation channel geometry, the fluid velocity profile, and the use of the field effect to control the zeta potential on the band distribution in the detection area are extensively discussed. The results for a U-shaped separation channel indicate that varying the zeta potential by controlling the field effect significantly reduces the band dispersion induced by the 90° turns within the channel. Finally, it is shown that the application of the proposed localized zeta potential variation method also results in a correction of the band tilting phenomenon and a reduction in the race-track effect

L4 ANSWER 6 OF 6 INSPEC (C) 2007 IET on STN
ACCESSION NUMBER: 2004:8086857 INSPEC
DOCUMENT NUMBER: A2004-20-8725D-010
TITLE: Transport, retention and fluorescent measurement of single biological cells studied in microfluidic chips
AUTHOR: Li, P.C.H.; de Camprieu, L.; Jia Cai; (Dept. of Chem., Simon Fraser Univ., Burnaby, BC, Canada), Sangar, M.

SOURCE: Lab on a Chip (June 2004), vol.4, no.3, p. 174-80, 39 refs.

CODEN: LCAHAM, ISSN: 1473-0197

SICI: 1473-0197(200406)4:3L.174:TRFM;1-Y

Published by: R. Soc. Chem, UK

DOCUMENT TYPE: Journal

TREATMENT CODE: Experimental

COUNTRY: United Kingdom

LANGUAGE: English

AN 2004:8086857 INSPEC DN A2004-20-8725D-010

AB Cellular manipulation and fluorescent measurement were performed on two types of biological cells. First, transport and retention of yeast cells were demonstrated on a glass microfluidic chip, which consists of special U-shaped microstructures. These microstructures have the openings parallel to the liquid flow and weirs perpendicular to the flow. These allow the retention of yeast cells in the U-shaped pocket and drainage of liquid over the weirs. Thereafter, the same chip was used to carry out real-time fluorescent measurement for the cellular changes in single Jurkat T cells. In this case, the Jurkat cells were localized inside the straight portion of a microchannel. Fluorescent imaging on the same, single suspension cell was carried out to study two cellular processes occurring in viable cells, (1) the intracellular conversion of fluorescein diacetate (FDA) to fluorescein; (2) the degradation of an inhibitory protein, I κ B, as involved in the NF- κ B signalling pathway. In the former, the increase in fluorescent intensity of single Jurkat T cells (due to fluorescein formation) was measured; whereas in the latter, the decrease in the fluorescent intensity of a single transfected Jurkat cell (due to the degradation of the I κ B-EGFP fusion protein) was monitored. In addition, we employed a Jurkat cell expressed with I κ B-EGFP to probe any possible action of an herbal compound, isoliquiritigenin (IQ), on the degradation of I κ B-EGFP. These examples have demonstrated that Jurkat cells remain viable within microfluidic channels for cellular studies and that the microfluidic chip can facilitate monitoring of cellular changes of biological cells at the single cell level and in the same cell

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